

A Contractor's Estimating Methodology: Conceptual Design to “100%” Construction Documents

September 15, 2008



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Presenters

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 - 30 Year Construction Veteran
 - Master's in Business Administration – Virginia Tech
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 - 21 Year Construction Veteran
 - B.S. in Civil Engineering and Building Construction Technology – Penn State

Introduction

- Purpose – a soup-to-nuts discussion of how a General Contractor generates an accurate budget from the early vision to the actual construction groundbreaking.



Design & Budget Development Evolution



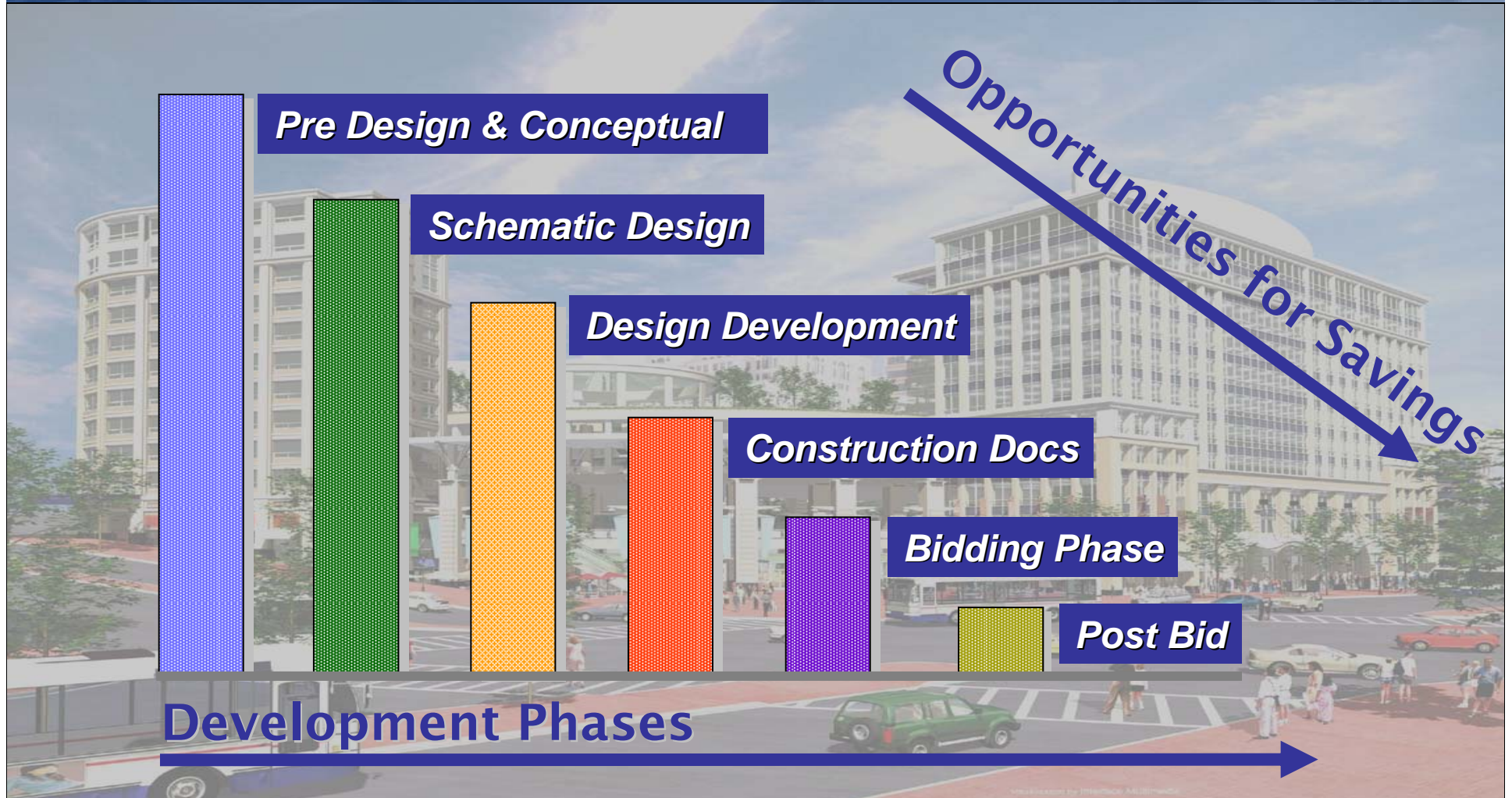
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Design & Budget Development Evolution

- Feasibility and Pre-Design
- Conceptual Design (10%)
- Schematic Design (30%)
- Design Development Phase (60%)
- Construction Document Phase (95%)
- Bidding Phase (100%)



Cost Savings Model



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GC Budget Components

- Design Parameters
 - Floor Area and Building Height
 - Parking Data
- General Conditions
- CSI Divisional Breakdown
 - Labor
 - Materials
 - Equipment
- Contingency
- Escalation
- Payroll & Other Taxes and Insurances
- Fee
- Bonds
- Qualifications and Assumptions
- Value Engineering
- Schedule
- Site Logistics Plan



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Cost Resources

- Historical Database
- Current Cost Indexes
- Subcontractor Input
- Industry Associations



Steel Frame Construction

DESCRIPTION	LOUDOUN MOB			BELWARD NORTH		
	SCHEDULED	BLDG AREA		SCHEDULED	BLDG AREA	
	VALUE	110,591	SF	VALUE	68,855	SF
General Conditions	\$774,127	\$7.00	SF	\$444,797	\$6.46	SF
Sitework	\$1,235,793	\$11.17	SF	\$554,790	\$8.06	SF
Concrete	\$752,770	\$6.81	SF	\$506,630	\$7.36	SF
Masonry	\$669,000	\$6.05	SF	\$376,828	\$5.47	SF
Structural Steel	\$1,105,000	\$9.99	SF	\$635,200	\$9.23	SF
Finish Carpet	\$18,804	\$0.17	SF	\$39,065	\$0.57	SF
Fireproofing	\$110,000	\$0.99	SF	\$54,700	\$0.79	SF
EFIS / Siding	\$0	\$0.00	SF	\$9,250	\$0.13	SF
Roofing	\$189,700	\$1.72	SF	\$88,585	\$1.29	SF
Caulking	\$22,875	\$0.21	SF	\$7,749	\$0.11	SF
Doors & Hardware	\$65,125	\$0.59	SF	\$34,388	\$0.50	SF
Storefront	\$562,920	\$5.09	SF	\$484,650	\$7.04	SF
Windows	\$0	\$0.00	SF	\$0	\$0.00	SF
Drywall	\$455,000	\$4.11	SF	\$353,968	\$5.14	SF
Flooring	\$53,138	\$0.48	SF	\$30,596	\$0.44	SF
Painting	\$88,700	\$0.80	SF	\$31,800	\$0.46	SF
Special Finishes Allowance	\$0	\$0.00	SF	\$0	\$0.00	SF
Casework	\$38,615	\$0.35	SF	\$0	\$0.00	SF
Electrical	\$368,000	\$3.33	SF	\$138,720	\$2.01	SF
HVAC	\$1,206,000	\$10.91	SF	\$698,140	\$10.14	SF
Sprinkler	\$155,300	\$1.40	SF	\$95,950	\$1.39	SF
Electrical	\$441,155	\$3.99	SF	\$469,400	\$6.82	SF
SUBTOTALS	\$8,341,848	\$75.43	SF	\$5,075,814	\$73.72	SF
FEES ADDED (9% with cont.)	\$750,766	\$6.79	SF	\$456,823	\$6.63	SF
TOTALS	\$9,092,614	82.22	SF	\$5,532,637	80.35	SF

Historical Database



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Concrete Frame Construction						
DESCRIPTION	ROCKVILLE METRO			8515 GEORGIA AVE		
	SCHEDULED	BLDG AREA		SCHEDULED	BLDG AREA	
	VALUE	233,151	SF	VALUE	192,286	SF
General Conditions	\$503,355	\$2.16	SF	\$603,333	\$3.14	SF
Sitework	\$2,581,032	\$11.07	SF	\$657,244	\$3.42	SF
Concrete	\$4,353,712	\$18.67	SF	\$4,574,760	\$23.79	SF
Masonry	\$68,013	\$0.29	SF	\$341,968	\$1.78	SF
Structural Steel	\$0	\$0.00	SF	\$0	\$0.00	SF
Finish Carpet	\$25,725	\$0.11	SF	\$126,407	\$0.66	SF
Fireproofing	\$0	\$0.00	SF	\$0	\$0.00	SF
EFIS / Siding	\$177,131	\$0.76	SF	\$282,050	\$1.47	SF
Roofing	\$167,699	\$0.72	SF	\$278,000	\$1.45	SF
Caulking	\$30,511	\$0.13	SF	\$50,780	\$0.26	SF
Doors & Hardware	\$136,029	\$0.58	SF	\$115,480	\$0.60	SF
Storefront	\$1,765,300	\$7.57	SF	\$2,107,500	\$10.96	SF
Windows	\$0	\$0.00	SF	\$0	\$0.00	SF
Drywall	\$658,150	\$2.82	SF	\$715,470	\$3.72	SF
Flooring	\$44,647	\$0.19	SF	\$27,257	\$0.14	SF
Painting	\$69,400	\$0.30	SF	\$84,486	\$0.44	SF
Special Finishes	\$100,000	\$0.43	SF	\$0	\$0.00	SF
Casework	\$57,429	\$0.25	SF	\$0	\$0.00	SF
Electrical	\$990,000	\$4.25	SF	\$637,500	\$3.32	SF
HVAC	\$1,481,700	\$6.36	SF	\$1,741,590	\$9.06	SF
Sprinkler	\$224,740	\$0.96	SF	\$206,240	\$1.07	SF
Electrical	\$1,006,100	\$4.32	SF	\$977,985	\$5.09	SF
SUBTOTALS	\$14,535,183	\$62.34	SF	\$13,613,367	\$70.80	SF
FEES ADDED (9% w	\$1,308,166	\$5.61	SF	\$1,225,203	\$6.37	SF
TOTALS	\$15,843,349	67.95	SF	\$14,838,570	77.17	SF

Historical Database



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Current Cost Indexes

ENR
Engineering News-Record

**Mid-Atlantic
Construction**

RSMMeans

RANDOM LENGTHS

Construction Economics

enr.com

FOR A COMPLETE HISTORY OF COST INDEXES, VISIT OUR WEBSITE, ENR.COM.

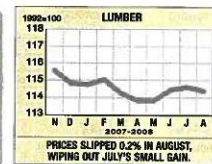
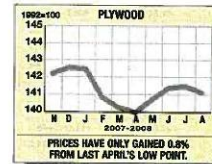
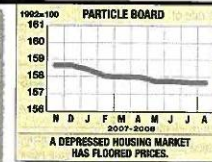
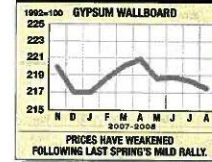
Housing Depression Pulls Down Lumber Prices

The weak housing market started cutting into lumber prices in 2005 and the downward pressure has yet to let up. The average mill price for lumber in July was down 12% from the previous year, according to pricing specialist Random Lengths, Eugene, Ore. This

year's price decrease follows year-to-year declines of 4% in 2007, 18% in 2006 and 11% in 2005, according to Random Length's composite index for framing lumber. ENR's 20-city average price for 2x4s fell 2% this year, following a 9% decline in 2007.



ENR's Materials Price Indexes



SOURCE: MCGRAW-HILL CONSTRUCTION RESEARCH & ANALYTICS/ENR

20-City Average

ITEM	UNIT	PRICE	% CHG. MO.	% CHG. YEAR
2" X 4": S4S				
Pine	mbf	397.23	-0.3	-3.3
Fir	mbf	457.50	-0.1	-4.3
Common	mbf	408.78	-0.2	-2.2
2" X 6": S4S				
Common	mbf	445.13	-0.1	-1.6
2" X 8": S4S				
Common	mbf	479.19	-0.2	-0.4
2" X 10": S4S				
Common	mbf	503.05	-0.4	+2.3
4" X 6": S4S				
Common	mbf	769.24	+0.1	+0.2
4" X 12": S4S				
Common	mbf	1028.52	0.0	-2.1
PLYWOOD: 5/8" THICK	msf	604.31	-0.3	-2.8
PLYFORM: 3/4" THICK	msf	1048.28	-0.1	+3.5
PARTICLE BOARD: UNDERLAYMENT				
5/8"	msf	384.79	0.0	-5.7
GYPSUM BOARD: REGULAR				
1/2"	msf	260.50	-0.4	-9.2
5/8"	msf	263.18	0.0	-4.6
Type-X, 1/2"	msf	263.95	-0.4	-6.3
5/8"	msf	280.22	-0.5	-12.2
ROOFING INSULATION: UNFACED	sf	6.50	+0.1	+1.1
WALL INSULATION: UNFACED	sf	5.32	+0.9	+2.7
PIPE INSULATION: FIBERGLASS	sf	6.78	+0.4	+0.8

Lumber, Plywood, Plyform

ITEM	UNIT	LOS ANGELES	MINNEAPOLIS	NEW ORLEANS	NEW YORK	PHILADELPHIA	PITTSBURGH	ST. LOUIS	SAN FRANCISCO	SEATTLE	MONTREAL	TORONTO
2" X 4": S4S												
Pine	mbf	409.26	340.00s	-401.25	—	—	473.00	320.00	416.08	+476.32h	+420.00s	470.00
Fir	mbf	480.68	—	—	560.00f	456.50	532.00	350.00	489.78	-484.00	—	—
Common	mbf	418.91	340.00f	-419.55	380.00	388.85	370.00	320.00p	420.49	-470.88	+420.00s	470.00
2" X 6": S4S												
Common	mbf	450.27	510.00s	-447.20p	—	383.89	428.00s	254.00p	450.82	-455.40	440.00p	490.00s
2" X 8": S4S												
Common	mbf	470.35	680.00s	-470.66p	—	385.75	438.00s	280.00p	472.51	-537.19f	+460.00p	570.00s
2" X 10": S4S												
Common	mbf	498.71	920.00f	-568.14p	—	445.25	537.00s	301.00p	488.33	-560.12f	—	560.00s
4" X 6": S4S												
Common	mbf	780.60	1002.00	840.00	—	1252.00	530.00	414.00p	783.29	-678.50	—	—
4" X 12": S4S												
Common	mbf	1030.44	1077.00	—	—	1288.00	—	520.00f	1035.19	930.00	—	—
PLYWOOD: 5/8" THICK	msf	621.49	621.00	582.80	—	700.17	469.00	530.00f	623.51	685.00	618.00	1015.00
PLYFORM: 3/4" THICK	msf	1000.09	1198.00	907.52	—	1388.35	1221.00	1380.00	1010.41	1013.00	1255.00	1219.00
PARTICLE BOARD: UNDERLAYMENT												
5/8"	msf	390.74	340.00	382.58	—	487.95	330.00	385.00	393.20	447.00	+425.00	620.00
GYPSUM BOARD: REGULAR												
1/2"	msf	284.62	240.00	257.82	—	289.25	270.00	240.00	286.91	267.00	330.00	340.00
5/8"	msf	267.11	—	259.95	—	293.75	—	—	268.09	278.00	—	—
Type-X												
1/2"	msf	289.39	—	270.35	—	303.95	295.00	240.00	270.01	266.00	430.00	530.00
5/8"	msf	280.94	270.00	277.89	—	305.10	300.00	270.00	282.77	282.00	430.00	—
ROOFING INSULATION: UNFACED	sf	7.91	6.30	6.34	—	6.87	6.90	6.80	7.99	7.00	8.15	6.00
WALL INSULATION: UNFACED	sf	5.01	4.80	5.80	—	4.79	4.10	5.50	5.06	5.05	5.85	4.30
PIPE INSULATION: FIBERGLASS	sf	6.00	9.60	8.28	—	6.92	3.43	6.69	6.33	6.30	10.06	8.80

continued from p. 31 | depending on what is most commonly used or most accessible in a city. All quantities are truckloads unless noted. Quotes for Montreal and Toronto are in Canadian dollars and a mix of metric and American units. Montreal prices do not include 15% sales tax. The above prices are not intended to represent the prevailing or average price in a city but are designed to track price movement from a single source for a given quantity and specification over time.



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Subcontractor Input

- Lunch and Learns
 - New Subcontractors
 - New Technology
- Price Bulletins
- Raw Material Updates
- Current Bid Pricing



Trade Organizations



Risk Assessment



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Primary Risk Factors

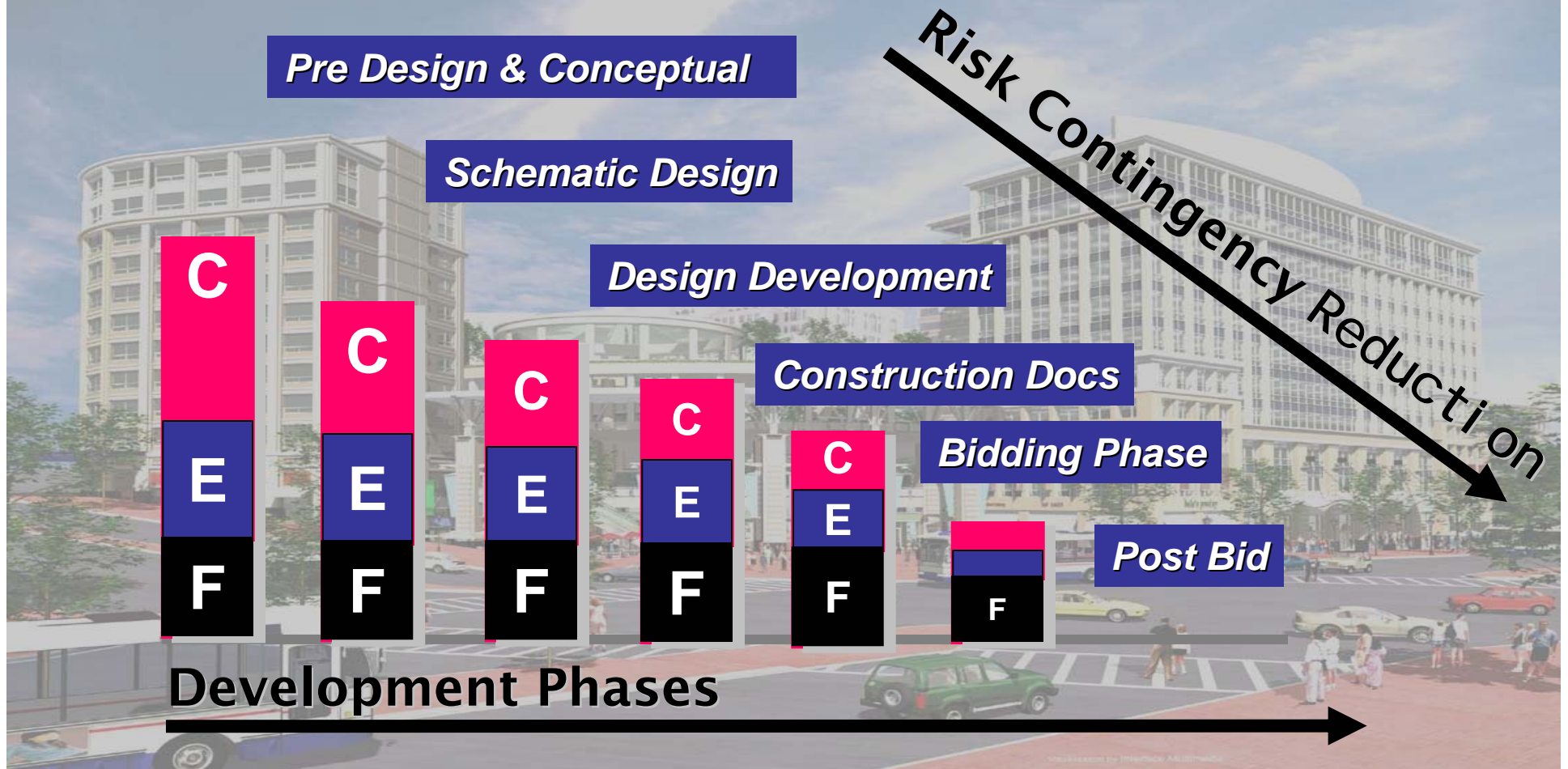
- Labor Cost Escalation
- Material and Equipment Cost Escalation
 - Inflationary trends
 - Market supply and demand
 - Global economic issues
- Design “creep”
- Constructability issues
- Timing and duration
- Site Constraints
- Contract Terms and Conditions
- Owner Relationships

Risk Allocation in Budget

- Line item / trade contingencies
- Allowances
- Cost Contingency: Design & Construction
- Escalation
- Fee



Risk Contingency Reduction Model



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Budget Development Process



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Feasibility and Pre-Design (Modeling) Phase

- Objective - Achieve consensus on budget and schedule parameters



Feasibility and Pre-Design (Modeling) Phase

- Tasks performed –
 - Evaluate/define building parameters
 - Evaluate floor plate options and building configurations
 - Evaluate building site options
 - Set benchmarks for cost, schedule and quality



Feasibility and Pre-Design Budget

Project Comparison:

Rockville Metro I (2003)	Office Bldg -	\$110/sf
	Structure Parking -	\$ 24,000/sp

Georgia Ave (2005)	Office Bldg -	\$118/sf
	Structure Parking -	\$28,000/sp

Building E Office Bldg – Escalated to 2008 Dollars

Office Bldg -	\$ 125/sf x 190,000 sf =	\$23,750,000
Structure Parking -	\$ 30,000/sp x 500 sp	<u>\$15,000,000</u>
		\$35,750,000



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Feasibility and Pre-Design

- Risk elements –

- Escalation

Included

- Construction Contingency

Included

- Fee

Included



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Conceptual Design – 10%

- Objective – determine range of solutions for Owner program



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Conceptual Design – 10%

- Tasks performed-
 - Identify needs and wants
 - Reconcile program requirements
 - Establish initial budget
 - Define big ticket costs (MEP, skin, etc)
 - Define special requirements (LEED?)
 - Benchmark to comparable projects



Conceptual Design (10%) Budget

ESTIMATE TYPE - CONCEPTUAL DESIGN 10%

PROJECT TYPE:	OFFICE	PROJECT:	PARK POTOMAC BLDG E		
BID DATE:	9/20/2007	AREA:	190,000	SF OFFICE	
BID TIME:			0	SF GARAGE	
			190,000	SF TOTAL	
TOTAL PARKING SPACES GARAGES			500	SPACES	BASED ON 3/1000 SF
TOTAL PARKING SPACES SURFACE			70	SPACES	
TOTAL PARKING SPACES			570	TOTAL PARKING	
SITE AREA			2.6	ACRES	
CONSTRUCTION DURATION:	17	MO			



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CODE	DESCRIPTION			QUANTITY	UNIT	UNIT COST	BUILDING TOTALS	GARAGE TOTALS	TRADE SUBTOTAL
DIV II - SITE WORK									
02-2100	SITework								
02-2100	SITE AREA			2.6	ACRES	\$300,000.00	\$780,000	\$0	
	TRADE SUBTOTAL								\$780,000
02-6010	SITE UTILITIES								
02-6650	WATER SERVICE			1	LS	\$25,000.00	\$25,000	\$0	
02-6650	STORM SYSTEM			1	LS	\$75,000.00	\$75,000	\$0	
02-6650	SANITARY SERVICE			1	LS	\$15,000.00	\$15,000	\$0	
	TRADE SUBTOTAL								\$115,000
02-8300	LANDSCAPING								
02-9900	LANDSCAPING / HARDSCAPE			2.6	ACRES	\$50,000.00	\$130,000	\$0	
	TRADE SUBTOTAL								\$130,000
02-5800	PARKING SPACES								
02-5800	BELOW GRADE (CONCRETE)			500	EA	\$35,000.00	\$0	\$17,500,000	
02-5800	ON GRADE			70	EA	\$6,000.00	\$0	\$420,000	
	TRADE SUBTOTAL								\$17,920,000
02-8300	BUILDING - TYPE								
02-9900	CONCRETE STRUCTURE			190,000.0	SF	\$125.00	\$23,750,000	\$0	
	TRADE SUBTOTAL								\$23,750,000



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CODE	DESCRIPTION			QUANTITY	UNIT	UNIT COST	BUILDING TOTALS	GARAGE TOTALS
							\$19,075,000	\$17,920,000
			GENERAL CONDITIONS				\$1,335,250	\$1,254,400
			SUBTOTALS				\$20,410,250	\$19,174,400
99-0003			BUILDERS RISK				\$33,769	\$15,521
			SUBTOTAL				\$20,444,019	\$19,189,921
99-0020	4.00%		ESCALATION (2.0% / YR)				\$817,761	\$767,597
			SUBTOTAL				\$21,261,780	\$19,957,518
99-0020	5.00%		CONTINGENCY				\$1,063,089	\$997,876
			SUBTOTAL				\$22,324,869	\$20,955,394
20-0000	6.00%		FEE				\$1,339,492	\$1,257,324
			SUBTOTAL				\$23,664,361	\$22,212,717
99-0002			GENERAL LIABILITY				\$141,986	\$133,276
			SUBTOTAL				\$23,806,347	\$22,345,994
99-0004			BOND				\$190,451	\$178,768
			BID TOTAL				\$23,996,798	\$22,524,762
			ROUND					
			COST PER SF/SP				\$126	\$39,517

Conceptual Design – 10%

- Risk elements –

- Escalation 4% / Year
- Construction Contingency 5%
- Fee 6%



Schematic Design – 30%

- Objective – Convert intent into feasible solution



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Schematic Design – 30%

- Tasks performed –
 - Incorporate all revisions up to date
 - Resolve variances between cost model assumptions & schematic narrative
 - Define quality standards
 - Prepare/confirm schematic design estimate to initial budget
 - Prepare initial schedule
 - Develop procurement strategy



Schematic Design (30%)

Budget

ESTIMATE TYPE - BUDGET UPDATE - 30% SCHEMATIC DESIGN

PROJECT TYPE:	OFFICE	PROJECT:	PARK POTOMAC BLDG E				
BID DATE:	9/20/2007	AREA:	190,000	SF OFFICE			
BID TIME:			200,000	SF GARAGE			
			390,000	SF TOTAL			
TOTAL PARKING SPACES GARAGES			500	SPACES	BASED ON 3/1000 SF		
TOTAL PARKING SPACES SURFACE			70	SPACES			
TOTAL PARKING SPACES			570	TOTAL PARKING			
			2.6	ACRES			
CONSTRUCTION DURATION:	17	MO					



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CODE	DESCRIPTION			QUANTITY	UNIT	UNIT COST	BUILDING TOTALS	GARAGE TOTALS
03-3100	STRUCTURAL CONCRETE							
03-3100	BELOW GRADE PARKING (BASED ON 400 SF / SPACE)			200,000	SF	\$29.00	\$0	\$5,800,000
03-3100	ABOVE GRADE BUILDING AREA			190,000	SF	\$26.00	\$4,940,000	\$0
	TRADE SUBTOTAL							\$0
03-4100	ARCHITECTURAL PRECAST							
03-4100	BUILDING ARCHITECTURAL PRECAST (BASED ON 45% PRECAST / 55% GLASS)							
03-4100	NORTH ELEVATION			7,561	SF	\$35.00	\$264,635	\$0
03-4100	SOUTH ELEVATION			8,136	SF	\$35.00	\$284,760	\$0
03-4100	WEST ELEVATION			3,011	SF	\$35.00	\$105,385	\$0
03-4100	EAST ELEVATION			2,460	SF	\$35.00	\$86,100	\$0
	TRADE SUBTOTAL							
	SUBTOTAL		DIV III			*****		
09-2600	DRYWALL							
09-2600	BUILDING DRYWALL							
09-2600	DRYWALL							
09-2600	MAIN LOBBY WALLS (NOT CORE)			8,640	SF	\$8.00	\$69,120	\$0
09-2600	PERIMETER WALLS			41,202	SF	\$10.00	\$412,020	\$0
09-2600	CORRIDOR / DEMISING WALLS			12,684	SF	\$8.00	\$101,472	\$0
09-2600	ELEVATOR SHAFT WALLS			19,152	SF	\$10.00	\$191,520	\$0
09-2600	STAIRWELLS			13,050	SF	\$6.00	\$78,300	\$0
09-2600	BATHROOMS			16,128	SF	\$6.00	\$96,768	\$0
09-2600	CORE / SHAFT WALLS			12,600	SF	\$12.00	\$151,200	\$0
09-2600	PENTHOUSE STUD WALL			3,780	SF	\$6.00	\$22,680	\$0
09-2600	PENTHOUSE ELEVATOR MACHINE ROOM			2,100	SF	\$6.00	\$12,600	\$0
09-2600	CEILING							
09-2600	ACOUSTICAL IN CORRIDOR			3,984	SF	\$2.75	\$10,956	\$0
09-2600	DRYWALL IN BATHROOMS			3,990	SF	\$3.25	\$12,968	\$0
09-2600	MAIN LOBBY DRYWALL			2,558	SF	\$3.25	\$8,314	\$0
09-2600	ACT IN 1ST FLOOR CORRIDOR			755	SF	\$2.75	\$2,076	\$0
09-2600	BULKHEADS IN LOBBY			440	LF	\$5.00	\$2,200	\$0
	TRADE SUBTOTAL							



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CODE	DESCRIPTION			QUANTITY	UNIT	UNIT COST	BUILDING TOTALS	GARAGE TOTALS
							\$17,575,676	\$7,703,534
			GENERAL CONDITIONS				\$1,230,297	\$539,247
			SUBTOTALS				\$18,805,973	\$8,242,781
99-0003			BUILDERS RISK				\$33,769	\$15,521
			SUBTOTAL				\$18,839,742	\$8,258,302
99-0020	4%		ESCALATION (2.0% / YR)				\$753,590	\$330,332
			SUBTOTAL				\$19,593,332	\$8,588,634
99-0020	5%		CONTINGENCY				\$979,667	\$429,432
			SUBTOTAL				\$20,572,999	\$9,018,066
20-0000	6%		FEE				\$1,234,380	\$541,084
			SUBTOTAL				\$21,807,379	\$9,559,150
99-0002			GENERAL LIABILITY				\$130,844	\$57,355
			SUBTOTAL				\$21,938,223	\$9,616,505
99-0004			BOND				\$175,506	\$76,932
			BID TOTAL				\$22,113,729	\$9,693,437
			ROUND					
			COST PER SF				\$116.39	\$48.47

Schematic Design – 30%

- Risk elements –

- Escalation 4% / Year
- Construction Contingency 5%
- Fee 6%



Design Development Phase – 60%

- Objective – refine cost, schedule and scope commitments



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Design Development Phase – 60%

- Tasks performed –
 - Incorporate all revisions to-date
 - Evaluate all Discipline drawings for constructability
 - Confirm program requirements are being met
 - Prepare/compare design development estimate to schematic budget
 - Refine schedule
 - Define long-lead items for procurement



Design Development (60%) Budget



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										OFFICE BUILDING	PARKING GARAGE	SURFACE PARKING
BUDGET UPDATE TO ADD # 5									PENTHOUSE	1,981		
									SEVENTH	26,256		
PROJECT TYPE:	OFFICE BLDG	PROJ:	PARK POTOMAC						SIXTH	26,342		
BID DATE:	9/20/2007	AREA:	188,213	SF OFFICE					FIFTH	26,342		
BID TIME:			223,573	SF GARAGE					FOURTH	26,342		
			411,786	SF TOTAL					THIRD	26,342		
TOTAL PARKING SPACES GARAGES			528	SPACES					SECOND	26,338		
TOTAL PARKING SPACES SURFACE			136	SPACES					GROUND	28,270		
	TOTAL PARKING SPACES		664						P1		115,300	
			337	SF/SP					P2		108,273	
DURATION:	17	MO								188,213	223,573	0



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CODE	DESCRIPTION		SUBCONTRACTOR	QUANTITY	UNIT	UNIT COST
03-3100	STRUCTURAL CONCRETE		MILLER AND LONG	1	LS	\$10,245,995.00
03-3100	GARAGE ELEV 356.5					
03-3100	GARAGE ELEV 342 (P-2)					
03-3100	SOUTH FOUNDATION WALL FOOTING			0	CY	\$0.00
03-3100	RAMP WALL FOOTINGS			18	CY	\$0.00
03-3100	EAST FOUNDATION WALL FOOTING			47	CY	\$0.00
03-3100	EXHAUST SHAFT SE CORNER			7	CY	\$0.00
03-3100	NORTH FOUNDATION WALL FOOTING WALL			15	CY	\$0.00
03-3100	WEST FOUNDATION WALL FOOTING			15	CY	\$0.00
03-3100	STAIR TOWER WALL FOOTINGS			8	CY	\$0.00
03-3100	SOUTH FOUNDATION WALL			0	CY	\$0.00
03-3100	EAST FOUNDATION WALL			313	CY	\$0.00
03-3100	EXHAUST SHAFT SE CORNER			48	CY	\$0.00
03-3100	NORTH FOUNDATION WALL			100	CY	\$0.00
03-3100	WEST FOUNDATION WALL			96	CY	\$0.00
03-3100	RAMP WALLS (12" THICK WALL)			116	CY	\$0.00
03-3100	STAIR TOWER WALLS (9" THICK)			51	CY	\$0.00
03-3100	ELEVATOR TOWER WALLS (9" THICK)			51	CY	\$0.00
03-3100	INTERIOR COLUMNS (F6 - 6' X 6' X 20")			4	CY	\$0.00
03-3100	INTERIOR COLUMNS (F8 - 8' X 8' X 24")			43	CY	\$0.00
03-3100	INTERIOR COLUMNS (F9 - 9' X 9' X 26")			52	CY	\$0.00
03-3100	INTERIOR COLUMNS (F10 - 10' X 10' X 28")			199	CY	\$0.00
03-3100	INTERIOR COLUMNS (F11 - 11' X 11' X 30")			762	CY	\$0.00
03-3100	INTERIOR COLUMNS (F12 - 12' X 12' X 34")			227	CY	\$0.00
03-3100	INTERIOR COLUMNS (F11x19 - 11' X 19' X 30")			157	CY	\$0.00
03-3100	INTERIOR COLUMNS (F23-8 - 23' X 8' X 26")			44	CY	\$0.00



FOULGER-PRATT
We Build to Last

CODE	DESCRIPTION				QUANTITY	UNIT	UNIT COST	BUILDING TOTALS	GARAGE TOTALS
								\$19,236,001	\$10,148,853
				GENERAL CONDITIONS				\$1,346,520	\$710,420
				SUBTOTALS				\$20,582,521	\$10,859,272
99-0003				BUILDERS RISK				\$33,769	\$15,521
				SUBTOTAL				\$20,616,290	\$10,874,793
99-0020	3%			ESCALATION (2.0% / YR)				\$824,652	\$434,992
				SUBTOTAL				\$21,440,942	\$11,309,785
99-0020	4%			CONTINGENCY				\$1,072,047	\$565,489
				SUBTOTAL				\$22,512,989	\$11,875,274
20-0000	5%			FEE				\$1,125,649	\$593,764
				SUBTOTAL				\$23,638,638	\$12,469,038
99-0002				GENERAL LIABILITY				\$141,832	\$74,814
				SUBTOTAL				\$23,780,470	\$12,543,852
99-0004				BOND				\$190,244	\$100,351
				BID TOTAL				\$23,970,714	\$12,644,203
				ROUND					
				COST PER SF				\$127.36	\$56.56

Design Development Phase – 60%

- Risk elements –
 - Escalation 3%
 - Construction Contingency 4%
 - Fee 5%

Construction Document Phase – 95%

- Objective – Oversee design development to ensure Owners objectives are met



Construction Document Phase – 95%

- Tasks performed –
 - Incorporate all revisions to-date
 - Evaluate all Discipline drawings for constructability
 - Confirm program requirements are being met
 - Compare design development estimate to updated budget
 - Refine schedule
 - Define long-lead items for procurement



FOULGER-PRATT

We Build to Last

Construction Documents (95%) Budget

									OFFICE BUILDING	PARKING GARAGE	SURFACE PARKING
ESTIMATE TYPE - BUDGET UPDATE THRU ADI								PENTHOUSE	1,981		
								SEVENTH	26,256		
TYPE:	OFFICE BLDG. ON UN			PROJ:	PARK POTOMAC			SIXTH	26,342		
BID DATE:	9/20/2007			AREA:	188,213	SF OFFICE		FIFTH	26,342		
BID TIME:					223,573	SF GARAGE		FOURTH	26,342		
					411,786	SF TOTAL		THIRD	26,342		
TOTAL PARKING SPACES GARAGES					528	SPACES		SECOND	26,338		
TOTAL PARKING SPACES SURFACE					136	SPACES		GROUND	28,270		
		TOTAL PARKING SPACES			664			P1		115,300	
					337	SF/SP		P2		108,273	
DURATION:	17	MO							188,213	223,573	0



FOULGER-PRATT
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CODE	DESCRIPTION	QTY	UNIT	UNIT COST	BUILDING TOTALS	GARAGE TOTALS	TRADE SUBTOTAL
03-3100	MILLER AND LONG	1	LS	\$10,245,995.00	\$4,098,398	\$6,147,597	
03-3100	GARAGE ELEV 356.5				\$0	\$0	
03-3100	GARAGE ELEV 342 (P-2)				\$0	\$0	
03-3100	PERIMETER FOUNDATION WALL - FOOTINGS				\$0	\$0	
03-3100	SOUTH FOUNDATION WALL FOOTINGS	0	CY	\$0.00	\$0	\$0	
03-3100	RAMP WALL FOOTINGS	18	CY	\$0.00	\$0	\$0	
03-3100	EAST FOUNDATION WALL FOOTINGS	47	CY	\$0.00	\$0	\$0	
03-3100	EXHAUST SHAFT SE CORNER	7	CY	\$0.00	\$0	\$0	
03-3100	NORTH FOUNDATION WALL FOOTINGS	15	CY	\$0.00	\$0	\$0	
03-3100	WEST FOUNDATION WALL FOOTINGS	15	CY	\$0.00	\$0	\$0	
03-3100	STAIR TOWER WALL FOOTINGS	8	CY	\$0.00	\$0	\$0	
03-3100	PERIMETER FOUNDATION WALL - WALLS (11' HIGH)				\$0	\$0	
03-3100	SOUTH FOUNDATION WALL	0	CY	\$0.00	\$0	\$0	
03-3100	EAST FOUNDATION WALL	313	CY	\$0.00	\$0	\$0	
03-3100	EXHAUST SHAFT SE CORNER	48	CY	\$0.00	\$0	\$0	
03-3100	NORTH FOUNDATION WALL	100	CY	\$0.00	\$0	\$0	
03-3100	WEST FOUNDATION WALL	96	CY	\$0.00	\$0	\$0	
03-3100	RAMP WALLS (12" THICK WALLS)	116	CY	\$0.00	\$0	\$0	
03-3100	STAIR TOWER WALLS (9" THICK WALLS)	51	CY	\$0.00	\$0	\$0	
03-3100	ELEVATOR TOWER WALLS (9" THICK WALLS)	51	CY	\$0.00	\$0	\$0	
03-3100	INTERIOR COLUMNS (F6 - 6' X 6')	4	CY	\$0.00	\$0	\$0	
03-3100	INTERIOR COLUMNS (F8 - 8' X 8')	43	CY	\$0.00	\$0	\$0	
03-3100	INTERIOR COLUMNS (F9 - 9' X 9')	52	CY	\$0.00	\$0	\$0	
03-3100	INTERIOR COLUMNS (F10 - 10' X 10')	199	CY	\$0.00	\$0	\$0	
03-3100	INTERIOR COLUMNS (F11 - 11' X 11')	762	CY	\$0.00	\$0	\$0	
03-3100	INTERIOR COLUMNS (F12 - 12' X 12')	227	CY	\$0.00	\$0	\$0	
03-3100	INTERIOR COLUMNS (F11x19 - 11' X 19')	157	CY	\$0.00	\$0	\$0	
03-3100	INTERIOR COLUMNS (F23-8 - 23' X 8')	44	CY	\$0.00	\$0	\$0	
03-3100	INTERIOR COLUMNS (F29-17 - 29' X 17')	365	CY	\$0.00	\$0	\$0	
03-3100	INTERIOR COLUMNS (F18-22 - 18' X 22')	244	CY	\$0.00	\$0	\$0	
03-3100	INTERIOR COLUMNS (F19-26 - 19' X 26')	634	CY	\$0.00	\$0	\$0	
03-3100	INTERIOR COLUMNS (F19-54 - 19' X 54')	355	CY	\$0.00	\$0	\$0	

CODE	DESCRIPTION				QUANTITY	UNIT	UNIT COST	BUILDING TOTALS	GARAGE TOTALS
								\$21,019,526	\$9,722,130
				GENERAL CONDITIONS				\$1,471,367	\$680,549
				SUBTOTALS				\$22,490,893	\$10,402,679
99-0003				BUILDERS RISK				\$33,769	\$15,521
				SUBTOTAL				\$22,524,662	\$10,418,200
99-0020	2.00%			ESCALATION				\$450,493	\$208,364
				SUBTOTAL				\$22,975,155	\$10,626,564
99-0020	2.00%			CONTINGENCY				\$459,503	\$212,531
				SUBTOTAL				\$23,434,658	\$10,839,096
20-0000	5.00%			FEE				\$1,171,733	\$541,955
				SUBTOTAL				\$24,606,391	\$11,381,051
99-0002				GENERAL LIABILITY				\$147,638	\$68,286
				SUBTOTAL				\$24,754,029	\$11,449,337
99-0004				BOND				\$198,032	\$91,595
				BID TOTAL				\$24,952,061	\$11,540,932
				ROUND					
				COST PER SF				\$132.57	\$51.62



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Construction Document Phase – 95%

- Risk elements –

- Escalation 2%

- Construction Contingency 2%

- Fee 5%



Bidding Phase – 100%

- Objective – Establish competitive but realistic GMP or Lump Sum Price from qualified Subcontractors

Bidding Phase – 100%

- Tasks performed –
 - Solicit subcontractor bids
 - Finalize general conditions
 - Review scopes of work for subcontractor understanding
 - Refine schedule
 - Confirm long-lead items for procurement
 - Prepare GMP or Bid



Bid Day Cut Sheet

CODE FROM APRIL BUDGET	SPEC SECTION	DESCRIPTION	EST	# of Bidders	SUBCONTRACTOR
		GENERAL CONDITIONS	SS		FPC
02-1520	NO SPEC	TEMPORARY SITE RETAINING WALLS	RPW	NA	ALLOWANCE
02-2100	311000, 312000	EARTHWORK	AJ	8	GOLDIN & STAFFORD
02-2400	BY TRADES	DEWATERING	AJ	NA	GOLDIN & STAFFORD
02-2800	313116	SOIL TREATMENT	RPW	2	MZ BUGS
02-5100	321313	SITE CONCRETE	RPW	3	CHEVY CHASE
02-5158	DRAWING L2.01	BRICK PAVERS	RPW	2	J&S
02-5104	IN SITE CONC.	CONCRETE PAVEMENT	RPW	NA	IN SITE CONCRETE
	DRAWING L2.01	ASPHALT PAVEMENT	RPW		O'LEARY
02-5800	321313	PAVEMENT MARKINGS	RPW	2	PREFERRED SERV.
02-6010		SITE UTILITIES	AJ	7	BUSY DITCH
07-7200		TEMPORARY UTILITIES AND FACILITIES	RPW	NA	FPC BUDGET
07-7500		CHAIN LINK FENCING	RPW	NA	FPC BUDGET
02-8700	129300	SITE FURNISHINGS	RPW	0	TRU-GREEN
02-8800	LANDSCAPE DRAWINGS	FOUNTAIN	RPW	1	US POOLS
02-8800	LANDSCAPE DRAWINGS	FIRE PIT	RPW		FPC BUDGET
02-9900	LANDSCAPE DRAWINGS	LANDSCAPING	RPW	5	F&F
03-3100	033000, 033650, 072100, 3346000	STRUCTURAL CONCRETE	AJ	4	MILLER AND LONG
03-4100	034500	ARCHITECTURAL PRECAST	WH	3	SHOCKEY
04-1000	042000, 072100	UNIT MASONRY	JW	4	SOUTH COUNTY
	NA	CAST STONE	JW	3	IN PRECAST CONC.
05-5000	055000, 055100, 055213, 057000	MISCELLANEOUS METALS	JW	5	MISC. METALS

Bid Day Cut Sheet

CODE FROM APRIL BUDGET	SPEC SECTION	DESCRIPTION	EST	# BIDS	SUBCONTRACTOR	FINAL LUMP SUM	ORIGINAL BUDGET
12-4813	124813	WALK OFF MATS	MB	3	MAT CONCEPT	\$5,408	\$3,200
14-2010	142100	ELEVATORS	WH	3	DELAWARE	\$1,127,687	\$860,000
15-3000	13900	FIRE PROTECTION	WH	1	AMERICAN AUTOMATIC SPRINKLER	\$673,757	\$825,000
15-5000	15400	PLUMBING	WH	5	AS JOHNSON	\$3,448,934	\$3,057,200
15-5000	15600	HVAC	WH	4	AS JOHNSON	IN PLUMBING	IN PLUMBING
16-1000	16100	ELECTRICAL	WH	1	TRULAND	\$3,590,000	\$3,300,000
16-1000	17100	CABLE PLANT	WH	1	TECH INC	\$37,000	NIC
16-1000	17900	SECURITY SYSTEM	WH	1	TECH INC	IN CABLE PLANT	NIC
		SUBTOTALS				\$32,693,200	
		BUILDERS RISK				\$81,733	\$76,522
		SUBTOTAL				\$32,774,933	\$33,347,009
		ESCALATION			0.00%	\$0	\$0
		SUBTOTAL				\$32,774,933	\$33,347,009
		CONTINGENCY			2.00%	\$655,499	\$1,667,350
		SUBTOTAL				\$33,430,432	\$35,014,359
		FEE			4.50%	\$1,504,369	\$1,750,718
		SUBTOTAL				\$34,934,801	\$36,765,077
		GENERAL LIABILITY				\$209,609	\$246,326
		SUBTOTAL				\$35,144,410	\$37,011,403
		BOND				\$281,155	\$266,480
		BID TOTALS				\$35,425,565	\$37,277,883

Bidding Phase – 100%

- Risk elements –
 - Escalation 0 - 2%
 - Construction Contingency 0 - 2%
 - Fee 3.5 - 5%

Any
questions?



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